

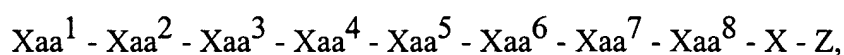
Amendments to the Claims

Please amend the claims to read as follows:

1. (Original) A method of promoting lipid mobilization in a human, the method comprising administering an insect adipokinetic hormone to the human in an amount effective to mobilize lipids in the human.
2. (Original) The method of claim 1, wherein the hormone has a molecular weight less than 2500.
3. (Original) The method of claim 1, wherein the hormone is a polypeptide having a pyroglutamate residue at its amino terminus.
4. (Original) The method of claim 1, wherein the hormone is a polypeptide having a blocked carboxyl terminus.
5. (Previously Presented) The method of claim 4, wherein the carboxyl terminus of the polypeptide is amidated.
6. (Original) The method of claim 1, wherein the hormone is a polypeptide that does not have internal disulfide bonds.
7. (Original) The method of claim 1, wherein the hormone is characterized in that its ability to promote lipid mobilization is not significantly inhibited by propanolol.
8. (Previously Presented) The method of claim 1, wherein the hormone is a polypeptide characterized in that:
 - i) it has a molecular weight less than 2500;

- ii) it has a pyroglutamate residue at its amino terminus;
- iii) it is amidated at its carboxyl terminus;
- iv) it does not have internal disulfide bonds; and
- v) its ability to promote lipid mobilization is not significantly inhibited by propanolol.

9. (Currently Amended) The method of claim 1, wherein the hormone has the chemical structure



wherein:

- Xaa¹ is a pyroglutamate residue;
- Xaa² is one of a leucine residue, an isoleucine residue, a valine residue, a phenylalanine residue, and a tyrosine residue;
- Xaa³ is one of an asparagine residue and a threonine residue;
- Xaa⁴ is one of a phenylalanine residue and a tyrosine residue;
- Xaa⁵ is one of a threonine residue and a serine residue;
- Xaa⁶ is one of a proline residue, a serine residue, a threonine residue, and an alanine residue;
- Xaa⁷ is one of a glycine residue, an asparagine residue, a serine residue, an aspartate residue, a valine residue, and a tryptophan residue;
- Xaa⁸ is a tryptophan residue;
- X is from 0 to 10 amino acid residues; and
- Z is one of a hydrogen radical and a carboxyl terminus-blocking moiety.

10. (Currently Amended) The method of claim 9, wherein:

- Xaa² is one of a leucine residue, and a valine residue;
- Xaa⁶ is one of a proline residue, a serine residue, and a threonine residue;
- Xaa⁷ is one of a glycine residue, an asparagine residue, and a serine residue;
- Xaa⁸ is a tryptophan residue;

X is from 0 to 3 amino acid residues; and

Z is an (-NH₂) radical.

11. (Original) The method of claim 10, wherein Xaa⁴ is a phenylalanine residue.

12. (Original) The method of claim 9, wherein:

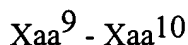
X is 0 amino acid residues; and

Z is an (-NH₂) radical.

13. (Original) The method of claim 9, wherein X is a glycine residue.

14. (Original) The method of claim 13, wherein Z is an (-NH₂) radical.

15. (Currently Amended) The method of claim 9, wherein X has the chemical structure



wherein:

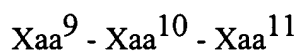
Xaa⁹ is a glycine residue; and

Xaa¹⁰ is one of a threonine residue, a glycine residue, a tryptophan residue, a serine residue, and an asparagine residue.

16. (Original) The method of claim 15, wherein Xaa¹⁰ is a threonine residue.

17. (Original) The method of claim 15, wherein Z is an (-NH₂) radical.

18. (Currently Amended) The method of claim 9, wherein X has the chemical structure



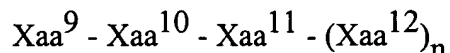
wherein:

Xaa⁹ is a glycine residue;

Xaa¹⁰ is one of a threonine residue, a glycine residue, a tryptophan residue, a serine residue, and an asparagine residue; and

Xaa¹¹ is a lysine residue.

19. (Original) The method of claim 9, wherein X has the chemical structure



wherein

n is from 0 to 7

Xaa⁹ is a glycine residue,

Xaa¹⁰, when present, is one of a threonine residue, a glycine residue, a tryptophan residue, a serine residue, and an asparagine residue;

Xaa¹¹, when present, is a lysine residue; and

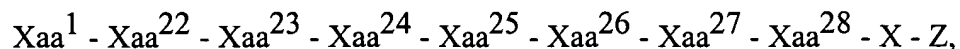
each Xaa¹², when present, is any amino acid residue.

20. (Original) The method of claim 9, wherein X is a glycine residue and Z is a hydrogen radical.

21. (Original) The method of claim 9, wherein the hormone is administered in an amount in the range from 100 milligrams to about 2 grams per day.

22. (Original) The method of claim 21, wherein the hormone is administered in an amount in the range from 200 milligrams to 1.0 gram per day.

23. (Original) The method of claim 1, wherein the hormone has the chemical structure



wherein:

Xaa¹ is a pyroglutamate residue;

Xaa²² is an amino acid residue having a non-polar side chain;

Xaa²³ is an amino acid residue having a non-ionic polar side chain;
Xaa²⁴ is an amino acid residue having an aromatic side chain;
Xaa²⁵ is an amino acid residue having a non-ionic polar side chain;
Xaa²⁶ is any amino acid residue;
Xaa²⁷ is any amino acid residue;
Xaa²⁸ is an amino acid residue having an aromatic side chain;
X is from 0 to 10 amino acid residues; and
Z is one of a hydrogen radical and a carboxyl terminus-blocking moiety.

24. (Original) The method of claim 23, wherein:

Xaa²⁶ is one of a proline residue, a serine residue, a threonine residue, and an alanine residue.

25. (Currently Amended) The method of claim 23, wherein:

Xaa²⁷ is one of a glycine residue, an asparagine residue, a serine residue, a glutamate residue, a valine residue, and a tryptophan residue.

26. (Original) The method of claim 23, wherein Z is an (-NH₂) radical.

27. (Original) The method of claim 26, wherein X is 0 amino acid residues.

28. (Original) The method of claim 23, wherein X is a glycine residue and Z is a hydrogen radical.

29. (Canceled)

30. (Currently Amended) A method of promoting lipid mobilization in a human, the method comprising administering to the human, in an amount effective to mobilize lipids in the human, a compound having the chemical structure



wherein:

Xaa^1 is a pyroglutamate residue;

Xaa^2 is one of a leucine residue, an isoleucine residue, a valine residue, a phenylalanine residue, and a tyrosine residue;

Xaa^3 is one of an asparagine residue and a threonine residue;

Xaa^4 is one of a phenylalanine residue and a tyrosine residue;

Xaa^5 is one of a threonine residue and a serine residue;

Xaa^6 is one of a proline residue, a serine residue, a threonine residue, and an alanine residue;

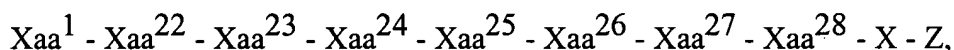
Xaa^7 is one of a glycine residue, an asparagine residue, a serine residue, an aspartate residue, a valine residue, and a tryptophan residue;

Xaa^8 is a tryptophan residue;

X is from 0 to 10 amino acid residues; and

Z is one of a hydrogen radical and a carboxyl terminus-blocking moiety.

31. (Original) A method of promoting lipid mobilization in a human, the method comprising administering to the human, in an amount effective to mobilize lipids in the human, a compound having the chemical structure



wherein:

Xaa^1 is a pyroglutamate residue;

Xaa^{22} is an amino acid residue having a non-polar side chain;

Xaa^{23} is an amino acid residue having a non-ionic polar side chain;

Xaa^{24} is an amino acid residue having an aromatic side chain;

Xaa²⁵ is an amino acid residue having a non-ionic polar side chain;

Xaa²⁶ is any amino acid residue;

Xaa²⁷ is any amino acid residue;

Xaa²⁸ is an amino acid residue having an aromatic side chain;

X is from 0 to 10 amino acid residues; and

Z is one of a hydrogen radical and a carboxyl terminus-blocking moiety.

32-35. (Canceled)

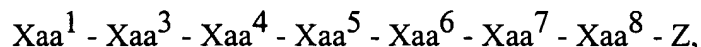
36. (Original) A method of promoting weight loss in a human, the method comprising administering an insect adipokinetic hormone to the human in an amount effective to mobilize lipids in the human.

37. (Original) The method of claim 36, wherein the human is afflicted with obesity.

38. (Original) A method of suppressing the appetite of a human, the method comprising administering an insect adipokinetic hormone to the human in an amount effective to mobilize lipids in the human, whereby the human's appetite is suppressed.

39 - 44. (Canceled)

45. (Currently Amended) A method of promoting lipid mobilization in a human, the method comprising administering an insect adipokinetic hormone to the human in an amount effective to mobilize lipids in the human, wherein the hormone has the chemical structure



wherein:

Xaa¹ is a pyroglutamate residue;

Xaa³ is one of an asparagine residue and a threonine residue;

Xaa⁴ is one of a phenylalanine residue and a tyrosine residue;

Xaa⁵ is one of a threonine residue and a serine residue;

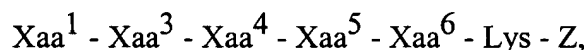
Xaa⁶ is one of a proline residue, a serine residue, a threonine residue, and an alanine residue;

Xaa⁷ is one of a glycine residue, an asparagine residue, a serine residue, an aspartate residue, a valine residue, and a tryptophan residue;

Xaa⁸ is a tryptophan residue; and

Z is one of a hydrogen radical and a carboxyl terminus-blocking moiety.

46. (Original) A method of promoting lipid mobilization in a human, the method comprising administering an insect adipokinetic hormone to the human in an amount effective to mobilize lipids in the human, wherein the hormone has the chemical structure



wherein:

Xaa¹ is a pyroglutamate residue;

Xaa³ is one of an asparagine residue and a threonine residue;

Xaa⁴ is one of a phenylalanine residue and a tyrosine residue;

Xaa⁵ is one of a threonine residue and a serine residue;

Xaa⁶ is one of a proline residue, a serine residue, a threonine residue, and an alanine residue; and

Z is one of a hydrogen radical and a carboxyl terminus-blocking moiety.

47. (Canceled).

48. (Previously Presented) The method of claim 1, wherein the hormone is a polypeptide having the amino acid sequence SEQ ID NO: 4.

49. (Canceled)

50. (Previously Presented) The method of claim 36, wherein the hormone is a polypeptide having the amino acid sequence SEQ ID NO: 4.

51. (Canceled)

52. (Currently Amended) The method of claim 30, wherein the ~~hormone~~compound is a polypeptide having the amino acid sequence SEQ ID NO: 4.

53. (Canceled)

54. (Currently Amended) The method of claim 31, wherein the ~~hormone~~compound is a polypeptide having the amino acid sequence SEQ ID NO: 4.

55. (New) The method of claim 1, wherein the hormone is an adipokinetic hormone of an insect selected from the group consisting of locusts, bees, dragonflies, flies, butterflies, tobacco hornworm moths, beetles, grasshoppers, crickets, cockroaches, mantids, periodical cicadas, stick insects, firebugs, and corn ear worms.

56. (New) The method of claim 1, wherein the hormone is an adipokinetic hormone of an insect selected from the group consisting of desert locusts, migratory locusts, honey bees, emperor dragonflies, damselflies, sawflies, fruit flies, horse flies, tenebrionid beetles, dung beetles, african pyrgomorphid grasshoppers, king crickets, ground crickets, american cockroaches, tropical cockroaches, and primitive cockroaches.

57. (New) The method of claim 1, wherein the hormone is an adipokinetic hormone of an insect selected from the group consisting of Schistocera gregaria, Locusta migratoria, Apis mellifera, Libellula auripennis, Anax imperator, Pseudagrion inconspicuum, Ishnura senegalensis,

Tenthredo arcuata, *Drosophila melanogaster*, *Tabanus atratus*, *Phormia terraenova*, *Vanessa cardui*, *Manduca sexta*, *Melolontha melolontha*, *Geotrupes stercorosus*, *Tenebrio molitor*, *Zophobas rugipes*, *Phymateus leprosus*, *Melanoplus sanguinipes*, *Dictyophorus spumans*, *Phymateus morbillosus*, *Gryllodes sigillatus*, *Libanasidus vittatus*, *Heterodes namaqua*, *Acanthoproctus cervinus*, *Periplaneta americana*, *Leucophaea maderae*, *Gromphadorhina porteneta*, *Blattella germanica*, *Blaberus discoidalis*, *Polyphaga aegyptiaca*, *Empusa pennata*, *Platypleura capensis*, *Cacama valavata*, *Diceroprocta semicincta*, *Extatosoma tiaratum*, *Pyrhocoris apterus*, and *Heliothis zea*.

58. (New) The method of claim 1, wherein the hormone is an adipokinetic hormone of an insect selected from the group consisting of desert locusts, migratory locusts, honey bees, tobacco hornworm moths, grasshoppers, cockroaches, and corn ear worms.

59. (New) The method of claim 1, wherein the hormone is an adipokinetic hormone of an insect selected from the group consisting of *Schistocera gregaria*, *Locusta migratoria*, *Apis mellifera*, *Manduca sexta*, *Melanoplus sanguinipes*, *Gromphadorhina porteneta*, *Blattella germanica*, *Blaberus discoidalis*, and *Heliothis zea*.

60. (New) The method of claim 36, wherein the hormone is an adipokinetic hormone of an insect selected from the group consisting of locusts, bees, dragonflies, flies, butterflies, tobacco hornworm moths, beetles, grasshoppers, crickets, cockroaches, mantids, periodical cicadas, stick insects, firebugs, and corn ear worms.

61. (New) The method of claim 36, wherein the hormone is an adipokinetic hormone of an insect selected from the group consisting of desert locusts, migratory locusts, honey bees, emperor dragonflies, damselflies, sawflies, fruit flies, horse flies, tenebrionid beetles, dung beetles, african pyrgomorphid grasshoppers, king crickets, ground crickets, american cockroaches, tropical cockroaches, and primitive cockroaches.

62. (New) The method of claim 36, wherein the hormone is an adipokinetic hormone of an insect selected from the group consisting of *Schistocera gregaria*, *Locusta migratoria*, *Apis mellifera*, *Libellula auripennis*, *Anax imperator*, *Pseudagrion inconspicuum*, *Ishnura senegalensis*, *Tenthredo arcuata*, *Drosophila melanogaster*, *Tabanus atratus*, *Phormia terraenova*, *Vanessa cardui*, *Manduca sexta*, *Melolontha melolontha*, *Geotrupes stercorosus*, *Tenebrio molitor*, *Zophobas rugipes*, *Phymateus leprosus*, *Melanoplus sanguinipes*, *Dictyophorus spumans*, *Phymateus morbillosus*, *Gryllodes sigillatus*, *Libanasidus vittatus*, *Heterodes namaqua*, *Acanthoproctus cervinus*, *Periplaneta americana*, *Leucophaea maderae*, *Gromphadorhina porteneta*, *Blattella germanica*, *Blaberus discoidalis*, *Polyphaga aegyptiaca*, *Empusa pennata*, *Platypleura capensis*, *Cacama valavata*, *Diceroprocta semicincta*, *Extatosoma tiaratum*, *Pyrhocoris apterus*, and *Heliothis zea*.

63. (New) The method of claim 36, wherein the hormone is an adipokinetic hormone of an insect selected from the group consisting of desert locusts, migratory locusts, honey bees, tobacco hornworm moths, grasshoppers, cockroaches, and corn ear worms.

64. (New) The method of claim 36, wherein the hormone is an adipokinetic hormone of an insect selected from the group consisting of *Schistocera gregaria*, *Locusta migratoria*, *Apis mellifera*, *Manduca sexta*, *Melanoplus sanguinipes*, *Gromphadorhina porteneta*, *Blattella germanica*, *Blaberus discoidalis*, and *Heliothis zea*.

65. (New) The method of claim 38, wherein the hormone is an adipokinetic hormone of an insect selected from the group consisting of locusts, bees, dragonflies, flies, butterflies, tobacco hornworm moths, beetles, grasshoppers, crickets, cockroaches, mantids, periodical cicadas, stick insects, firebugs, and corn ear worms.

66. (New) The method of claim 38, wherein the hormone is an adipokinetic hormone of an insect selected from the group consisting of desert locusts, migratory locusts, honey bees, emperor dragonflies, damselflies, sawflies, fruit flies, horse flies, tenebrionid beetles, dung beetles, african pyrgomorphid grasshoppers, king crickets, ground crickets, american cockroaches, tropical cockroaches, and primitive cockroaches.

67. (New) The method of claim 38, wherein the hormone is an adipokinetic hormone of an insect selected from the group consisting of *Schistocera gregaria*, *Locusta migratoria*, *Apis mellifera*, *Libellula auripennis*, *Anax imperator*, *Pseudagrion inconspicuum*, *Ishnura senegalensis*, *Tenthredo arcuata*, *Drosophila melanogaster*, *Tabanus atratus*, *Phormia terraenova*, *Vanessa cardui*, *Manduca sexta*, *Melolontha melolontha*, *Geotrupes stercorosus*, *Tenebrio molitor*, *Zophobas rugipes*, *Phymateus leprosus*, *Melanoplus sanguinipes*, *Dictyophorus spumans*, *Phymateus morbillosus*, *Gryllodes sigillatus*, *Libanasidus vittatus*, *Heterodes namaqua*, *Acanthoproctus cervinus*, *Periplaneta americana*, *Leucophaea maderae*, *Gromphadorhina porteneta*, *Blattella germanica*, *Blaberus discoidalis*, *Polyphaga aegyptiaca*, *Empusa pennata*, *Platypleura capensis*, *Cacama valavata*, *Diceroprocta semicincta*, *Extatosoma tiaratum*, *Pyrhocoris apterus*, and *Heliothis zea*.

68. (New) The method of claim 38, wherein the hormone is an adipokinetic hormone of an insect selected from the group consisting of desert locusts, migratory locusts, honey bees, tobacco hornworm moths, grasshoppers, cockroaches, and corn ear worms.

69. (New) The method of claim 38, wherein the hormone is an adipokinetic hormone of an insect selected from the group consisting of *Schistocera gregaria*, *Locusta migratoria*, *Apis mellifera*, *Manduca sexta*, *Melanoplus sanguinipes*, *Gromphadorhina porteneta*, *Blattella germanica*, *Blaberus discoidalis*, and *Heliothis zea*.